

acid (I; R = OH) are reported. The best results were found for the 3-furyl and 2-methoxy thiazol-5-yl analogs.

L35 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2000 ACS

AN 1996:19712 HCAPLUS

DN 124:164360

TI Antibacterial activity of a synthetic peptide (PR-26) derived from **PR-39**, a proline-arginine-rich neutrophil antimicrobial peptide

AU Shi, Jishu; Ross, Christopher R.; Chengappa, M. M.; Sylte, Matt J.; McVey, D. Scott; Blecha, Frank

CS Dep. Anat. Physiol., Kansas State Univ., Manhattan, KS, 66506, USA

SO Antimicrob. Agents Chemother. (1996), 40(1), 115-21

CODEN: AMACQ; ISSN: 0066-4804

DT Journal

LA English

AB **PR-39** is a proline-arginine-rich (PR) neutrophil antibacterial peptide originally identified and purified from the porcine small intestine. We report on the synthesis of a functional antibacterial domain of **PR-39**, the first 26 amino acid residues of the NH2 terminus. PR-26 was as potent as or more potent than **PR-39** against enteric gram-neg. bacteria. This truncated form of **PR-39** potentiated neutrophil phagocytosis of Salmonella choleraesuis and decreased the level of S. typhimurium invasion into intestinal epithelial cells. SEM confirmed that these peptides did not lyse cells by pore-forming mechanisms; however, they potentiated the antibacterial capabilities of a pore-forming peptide, magainin A. In addn., PR-26 was not toxic to epithelial cells at concns. several times greater than its bactericidal concn. These data suggest that **PR-39** and its functional domain, PR-26, may potentiate the host's defense capabilities against gram-neg. infections.

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L49 ANSWER 1 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS

AN 2000:440602 BIOSIS

DN PREV200000440602

TI **PR-39**, endogenous antimicrobial peptide derived from porcine neutrophils is capable binding PI3Kp85 and inhibits cell proliferation and modifies actin bundle structure in K-ras transformed cells.

AU Kohgo, Yutaka (1); Fujimoto, Yoshinori (1); Tanaka, Koji (1); Suzuki, Masako (1); Suzuki, Yasuaki (1); Saito, Hiroyuki (1); Ohtake, Takaaki (1)

CS (1) Third Department of Internal Medicine, Asahikawa Medical College, Asahikawa, Hokkaido Japan

SO Acta Haematologica (Basel), (July, 2000) Vol. 103, No. Supplement 1, pp. 30. print.

Meeting Info.: 13th Symposium on Molecular Biology of Hematopoiesis and Treatment of Leukemia and Cancer New York, NY, USA July 14-18, 2000

ISSN: 0001-5792.

DT **Conference**
 LA English
 SL English
 CC Immunology and Immunochemistry - General; Methods *34502
General Biology - Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals *00520
 Cytology and Cytochemistry - General *02502
 Cytology and Cytochemistry - Animal *02506
 Blood, Blood-Forming Organs and Body Fluids - Blood and Lymph Studies
 *15002
 Blood, Blood-Forming Organs and Body Fluids - Blood Cell Studies *15004
 BC Microorganisms - Unspecified 01000
 IT Major Concepts
 Cell Biology; Immune System (Chemical Coordination and Homeostasis);
 Blood and Lymphatics (Transport and Circulation)
 IT Parts, Structures, & Systems of Organisms
 neutrophil: blood and lymphatics, immune system
 IT Chemicals & Biochemicals
 PR-39: endogenous antimicrobial peptide
 IT Miscellaneous Descriptors
 innate immunity; **Meeting Abstract**
 ORGN Super Taxa
 Microorganisms; Suidae: Artiodactyla, Mammalia, Vertebrata, Chordata,
 Animalia
 ORGN Organism Name
 microbe (Microorganisms); porcine (Suidae)
 ORGN Organism Superterms
 Animals; Artiodactyls; Chordates; Mammals; Microorganisms; Nonhuman
 Mammals; Nonhuman Vertebrates; Vertebrates
 RN 52622-12-5Q (**PR-39**)
 139637-11-9Q (**PR-39**)

L49 ANSWER 2 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 2000:300808 BIOSIS
 DN PREV200000300808
 TI Inhibition of NAD(P)H oxidase by diphenylene iodonium and **PR-**
39 did not prevent glomus cell calcium and chemoreceptor responses
 in rat carotid body.
 AU Roy, A. (1); Mokashi, A. (1); Rozanov, C. (1); Daudu, P. (1); Ross, C.;
 Lahiri, S. (1)
 CS (1) Department of Physiology, University of Pennsylvania School of
 Medicine, Philadelphia, PA, 19104-6085 USA
 SO FASEB Journal, (March 15, 2000) Vol. 14, No. 4, pp. A393. print.
 Meeting Info.: **Annual Meeting of Professional Research Scientists:**
Experimental Biology 2000 San Diego, California, USA April 15-18,
 2000 Federation of American Societies for Experimental Biology
 . ISSN: 0892-6638.

DT **Conference**
 LA English
 SL English
 CC Nervous System - General; Methods *20501
 Cytology and Cytochemistry - Animal *02506
 Biophysics - General Biophysical Studies *10502
 Enzymes - General and Comparative Studies; Coenzymes *10802
 Cardiovascular System - General; Methods *14501
General Biology - Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals *00520
 IT Major Concepts
 Biochemistry and Molecular Biophysics; Nervous System (Neural
 Coordination)
 IT Parts, Structures, & Systems of Organisms
 carotid body: circulatory system, nervous system; carotid sinus nerve:
 nervous system; glomus cell: nervous system
 IT Chemicals & Biochemicals
 NADPH oxidase; **PR-39**; chemoreceptor; diphenylene

iodonium; reactive oxygen species: production
IT Miscellaneous Descriptors
 Meeting Abstract
ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
 rat (Muridae)
ORGN Organism Superterms
 Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates;
 Rodents; Vertebrates
RN 9032-22-8Q (NADPH OXIDASE)
 37256-37-4Q (NADPH OXIDASE)
 77106-92-4Q (NADPH OXIDASE)
 52622-12-5Q (**PR-39**)
 139637-11-9Q (PR-39)
 244-54-2 (DIPHENYLENE IODONIUM)

L49 ANSWER 3 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 2000:223066 BIOSIS
DN PREV2000000223066
TI Sequence determinants and SH3-binding motif in **PR-39**
 cathelicidin controls antibacterial activity and binding to mammalian
 targets.
AU Chan, Y. R. (1); Zanetti, M.; Genarro, R.; Gallo, R. L.
CS (1) Harvard Medical School, Boston, MA USA
SO Journal of Investigative Dermatology, (April, 2000) Vol. 114, No. 4, pp.
 757.
 Meeting Info.: **61st Annual Meeting of the Society for Investigative**
 Dermatology. Chicago, Illinois, USA May 10-14, 2000
 ISSN: 0022-202X.

DT **Conference**
LA English
SL English
CC Chemotherapy - General; Methods; Metabolism *38502
 Genetics and Cytogenetics - Animal *03506
 Biochemical Studies - General *10060
 Biophysics - General Biophysical Studies *10502
 General Biology - Symposia, Transactions and Proceedings of
 Conferences, Congresses, Review Annuals *00520
BC Mammalia - Unspecified 85700
IT Major Concepts
 Biochemistry and Molecular Biophysics; Pharmacology
IT Chemicals & Biochemicals
 PR-39: SH-3 binding motif, antibacterial; SH-3
 peptide: binding; mRNA [messenger RNA]: induction; syndecan-4
IT Miscellaneous Descriptors
 wound repair; **Meeting Abstract**
ORGN Super Taxa
 Mammalia: Vertebrata, Chordata, Animalia; Muridae: Rodentia, Mammalia,
 Vertebrata, Chordata, Animalia
ORGN Organism Name
 NIH-3T3 cell line (Muridae): fibroblast; mammal (Mammalia)
ORGN Organism Superterms
 Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates;
 Rodents; Vertebrates
RN 52622-12-5Q (**PR-39**)
 139637-11-9Q (PR-39)

L49 ANSWER 4 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 2000:24866 BIOSIS
DN PREV200000024866
TI Proteasome-dependent regulation of angiogenesis: A novel therapeutic
 approach.
AU Li, Jian (1); Post, Mark (1); **Gao, Youhe (1)**; Li, Min (1);
 Metais, Caroline (1); Aird, William (1); Sellke, Frank W. (1); Hampton,
 Thomas G. (1); Carmeliet, Peter P.; **Simons, Michael**

CS (1) Beth Israel Deaconess Med Ctr, Harvard Med Sch, Boston, MA USA
SO Circulation, (Nov. 2, 1999) Vol. 110, No. 18 SUPPL., pp.
I.475-I.476.
Meeting Info.: **72nd Scientific Sessions of the American Heart Association** Atlanta, Georgia, USA November 7-10, 1999
ISSN: 0009-7322.

DT **Conference**
LA English
CC Cardiovascular System - General; Methods *14501
Biochemical Studies - General *10060
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520
Endocrine System - General *17002

IT Major Concepts
Biochemistry and Molecular Biophysics; Cardiovascular System (Transport and Circulation)

IT Parts, Structures, & Systems of Organisms
heart: circulatory system

IT Chemicals & Biochemicals
FGF-R1 [fibroblast growth factor-R1]: expression; Flt-1: expression;
HIF-1-alpha: expression; **PR39** protein: overexpression,
therapeutic potential; VEGF [vascular endothelial growth factor]:
expression

IT Miscellaneous Descriptors
angiogenesis: **PR39**-induced, molecular basis,
proteasome-dependent regulation; **Meeting Abstract**

ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
mouse (Muridae)

ORGN Organism Superterms
Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates;
Rodents; Vertebrates

RN 127464-60-2 (VASCULAR ENDOTHELIAL GROWTH FACTOR)

L49 ANSWER 5 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1999:524759 BIOSIS
DN PREV199900524759
TI Cardiac-specific overexpression of **PR-39** induces
angiogenesis, myocardial hypertrophy, and increased microvascular
reactivity.

AU Li, Jian; Hampton, Thomas G.; Metais, Caroline; Ma, Lijie; Li, Jianyi;
Amende, Ivo; Sellke, Frank W.; Douglas, Pamela S.; Morgan, James P.;
Simons, Michael

CS BIBMC/Harvard Med. Sch., Boston, MA USA
SO Circulation, (Oct. 27, 1998) Vol. 98, No. 17 SUPPL., pp. I794.
Meeting Info.: **71st Scientific Sessions of the American Heart Association** Dallas, Texas, USA November 8-11, 1998 The American Heart
Association
. ISSN: 0009-7322.

DT **Conference**
LA English
CC Cardiovascular System - Blood Vessel Pathology *14508
Cardiovascular System - Physiology and Biochemistry *14504
Cardiovascular System - Heart Pathology *14506
Endocrine System - Neuroendocrinology *17020
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520
Biochemical Studies - Proteins, Peptides and Amino Acids *10064

BC Muridae 86375

IT Major Concepts
Cardiovascular System (Transport and Circulation)

IT Diseases
myocardial hypertrophy: heart disease; myocardial infarction: heart
disease, vascular disease

IT Chemicals & Biochemicals

serotonin; **PR-39**

IT Alternate Indexing
Heart Hypertrophy (MeSH); Myocardial Infarction (MeSH)

IT Miscellaneous Descriptors
angiogenesis; **Meeting Abstract**

ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
mouse (Muridae)

ORGN Organism Superterms
Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates;
Rodents; Vertebrates

RN 52622-12-5Q (**PR-39**)
139637-11-9Q (PR-39)
50-67-9 (SEROTONIN)

L49 ANSWER 6 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1999:227498 BIOSIS
DN PREV199900227498
TI Epithelial innate defense by excreted PR-rich peptides involves
intracellular "short circuiting."
AU Chan, Y. R. (1); Gallo, R. L. (1)
CS (1) Department of Dermatology, Boston Children's Hospital and Harvard
Medical School, Boston, MA USA
SO Journal of Investigative Dermatology, (April, 1999) Vol. 112, No. 4, pp.
533.
Meeting Info.: **60th Annual Meeting of the Society for Investigative
Dermatology** Chicago, Illinois, USA May 5-9, 1999
ISSN: 0022-202X.

DT **Conference**
LA English
CC Cytology and Cytochemistry - Animal *02506
Integumentary System - General; Methods *18501
Immunology and Immunochemistry - General; Methods *34502
**General Biology - Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals *00520**

BC Muridae 86375

IT Major Concepts
Cell Biology; Immune System (Chemical Coordination and Homeostasis);
Integumentary System (Chemical Coordination and Homeostasis)

IT Chemicals & Biochemicals
PR-39: antimicrobial peptide, proline-arginine rich
peptide, sort-circuiting effects, excretion

IT Miscellaneous Descriptors
cutaneous immunity; epithelial innate defense; intracellular signaling
pathways; **Meeting Abstract**

ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
NIH 3T3 cell line (Muridae)

ORGN Organism Superterms
Animals; Chordates; Mammals; Nonhuman Mammals; Nonhuman Vertebrates;
Rodents; Vertebrates

RN 52622-12-5Q (**PR-39**)
139637-11-9Q (PR-39)

L49 ANSWER 7 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1999:18195 BIOSIS
DN PREV199900018195
TI **PR39** interacts with proteasome and modulates HIF-1alpha level in
ECV cells.
AU **Gao, Youhe**; Volk, Ruediger; Li, Jian; **Simons, Michael**
CS Angiogenesis Res. Cent., Beth Israel Deaconess Med. Cent., Harv. Med.
Sch., Boston, MA USA
SO Molecular Biology of the Cell, (Nov., 1998) Vol. 9, No. SUPPL.,
pp. 123A.

Meeting Info.: **38th Annual Meeting of the American Society for Cell Biology** San Francisco, California, USA December 12-16, 1998 American Society for Cell Biology
 . ISSN: 1059-1524.

DT **Conference**
 LA English
 CC Cytology and Cytochemistry - General *02502
 Biochemical Studies - General *10060
 Metabolism - General Metabolism; Metabolic Pathways *13002
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520
 BC Hominidae 86215
 Muridae 86375
 IT Major Concepts
 Biochemistry and Molecular Biophysics; Cell Biology
 IT Chemicals & Biochemicals
 cDNA; hypoxia inducible factor-1 alpha; **PR39**: activity, antibacterial peptide
 IT Miscellaneous Descriptors
 proteasome; **Meeting Abstract**
 ORGN Super Taxa
 Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia; Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
 ORGN Organism Name
 ECV (Hominidae): human endothelial cells; 3T3 (Muridae): mouse cells
 ORGN Organism Superterms
 Animals; Chordates; Humans; Mammals; Nonhuman Mammals; Nonhuman Vertebrates; Primates; Rodents; Vertebrates
 RN 52622-12-5Q (**PR39**)
 139637-11-9Q (**PR39**)

L49 ANSWER 8 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1998:525904 BIOSIS
 DN PREV199800525904
 TI Suppression of invasive activity and alteration of actin structure caused by transfection with **PR-39** gene into human hepatoma cells.
 AU Fujimoto, Y.; Ohtake, T.; Tanaka, K.; Suzuki, Y.; Ikuta, K.; Saito, H.; Ohhira, M.; Ono, M.; Kohgo, Y.
 CS Third Dep. Intern. Med., Asahikawa Med. Coll., Asahikawa Japan
 SO Hepatology, (Oct., 1998) Vol. 28, No. 4 PART 2, pp. 399A.
 Meeting Info.: **Biennial Scientific Meeting of the International Association for the Study of the Liver and the 49th Annual Meeting and Postgraduate Courses of the American Association for the Study of Liver Diseases** Chicago, Illinois, USA November 4-10, 1998 International Association for the Study of the Liver
 . ISSN: 0270-9139.

DT **Conference**
 LA English
 CC Neoplasms and Neoplastic Agents - Therapeutic Agents; Therapy *24008
 Cytology and Cytochemistry - Human *02508
 Genetics and Cytogenetics - Human *03508
 Metabolism - Proteins, Peptides and Amino Acids *13012
 Digestive System - Pathology *14006
 Neoplasms and Neoplastic Agents - Neoplastic Cell Lines *24005
 Neoplasms and Neoplastic Agents - Biochemistry *24006
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520
 Biochemical Studies - Proteins, Peptides and Amino Acids *10064
 Movement *12100
 Pathology, General and Miscellaneous - Therapy *12512
 Tissue Culture, Apparatus, Methods and Media *32500
 BC Hominidae 86215
 IT Major Concepts
 Tumor Biology
 IT Chemicals & Biochemicals

PR-39 gene: tumor cell actin structure alteration,
tumor cell invasion suppression, tumor cell transfection

IT Miscellaneous Descriptors
Meeting Abstract

ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
HLF (Hominidae): human hepatoma cell line, in-vitro gene therapy model system

ORGN Organism Superterms
Animals; Chordates; Humans; Mammals; Primates; Vertebrates

RN 132579-20-5 (ACTIN)
52622-12-5Q (PR-39)
139637-11-9Q (PR-39)

L49 ANSWER 9 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1998:204187 BIOSIS
DN PREV199800204187
TI Suppression of inflammatory liver injury by a proline-arginine-rich peptide, PR-39.
AU Ross, C. R. (1); Blecha, F.; Basaraba, R.
CS (1) Dep. Anatomy, Kansas State Univ., Manhattan, KS 66506 USA
SO FASEB Journal, (March 20, 1998) Vol. 12, No. 5, pp. A1004.
Meeting Info.: **Annual Meeting of the Professional Research Scientists on Experimental Biology 98, Part II** San Francisco, California, USA April 18-22, 1998 Federation of American Societies for Experimental Biology
. ISSN: 0892-6638.

DT **Conference**
LA English
CC Digestive System - Pathology *14006
Pathology, General and Miscellaneous - Inflammation and Inflammatory Disease *12508
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520
Biochemical Studies - General *10060

IT Major Concepts
Dental and Oral System (Ingestion and Assimilation)

IT Diseases
inflammatory liver injury: digestive system disease, injury

IT Chemicals & Biochemicals
PR-39: proline-arginine-rich peptide

IT Miscellaneous Descriptors
Meeting Abstract

RN 52622-12-5Q (PR-39)
139637-11-9Q (PR-39)

L49 ANSWER 10 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1998:195926 BIOSIS
DN PREV199800195926
TI Proline-rich antimicrobial peptide, PR-39, suppresses invasion and motility of human hepatoma: Dependence on sydecin-1 induction and actin structure alteration.
AU Ohtake, T.; Fujimoto, Y.; Ikuta, K.; Tanaka, K.; Saito, H.; Ohhira, M.; Ono, M.; Kohgo, Y.
CS Third Dep. Intern. Med., Asahikawa Med. Coll., Nishikagura 4-5, Asahikawa Japan
SO **Proceedings of the American Association for Cancer Research Annual Meeting**, (March, 1998) Vol. 39, pp. 301.
Meeting Info.: **89th Annual Meeting of the American Association for Cancer Research** New Orleans, Louisiana, USA March 28-April 1, 1998 American Association for Cancer Research
. ISSN: 0197-016X.

DT **Conference**
LA English
CC Neoplasms and Neoplastic Agents - Pathology; Clinical Aspects; Systemic

Effects *24004
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520
 Biochemical Studies - Proteins, Peptides and Amino Acids *10064

IT Major Concepts
 Tumor Biology

IT Diseases
 hepatoma: digestive system disease, neoplastic disease

IT Chemicals & Biochemicals
 actin: structure alteration; syndecan-1: dependence, induction;
 PR-39: proline-rich antimicrobial peptide

IT Miscellaneous Descriptors
 Meeting Abstract

RN 147-85-3Q (PROLINE)
 609-36-9Q (PROLINE)
 52622-12-5Q (**PR-39**)
139637-11-9Q (PR-39)
 132579-20-5 (ACTIN)

L49 ANSWER 11 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1998:21063 BIOSIS
 DN PREV199800021063
 TI **PR-39**, a syndecan-inducing peptide secreted during wound repair, binds intracellular SH3 targets.
 AU Chan, Y. R.; Gallo, R.
 CS Dep. Dermatol., Child. Hosp., Harvard Med. Sch., Boston, MA 02115 USA
 SO Molecular Biology of the Cell, (Nov., 1997) Vol. 8, No. SUPPL., pp. 282A.
 Meeting Info.: **37th Annual Meeting of the American Society for Cell Biology** Washington, D.C., USA December 13-17, 1997 American Society for Cell Biology
 . ISSN: 1059-1524.

DT **Conference**
 LA English
 CC Cytology and Cytochemistry - Animal *02506
 Biochemical Studies - Proteins, Peptides and Amino Acids *10064
 Enzymes - Physiological Studies *10808
 Anatomy and Histology, General and Comparative - Regeneration and Transplantation *11107
General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals *00520

IT Major Concepts
 Cell Biology

IT Parts, Structures, & Systems of Organisms
 mesenchymal cell

IT Chemicals & Biochemicals
 phospholipase C gamma; syndecan: expression; **PR-39**: secretion

IT Miscellaneous Descriptors
 integrin signaling; wound repair; **Meeting Abstract**;
 Meeting Poster

RN 52622-12-5Q (**PR-39**)
139637-11-9Q (PR-39)
 153-87-7Q (INTEGRIN)
 60791-49-3Q (INTEGRIN)
 9001-86-9 (PHOSPHOLIPASE C)

L49 ANSWER 12 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1997:510133 BIOSIS
 DN PREV199799809336
 TI Macrophage-dependent regulation of syndecan gene expression.
 AU Li, Jian; Brown, Lawrence F.; Laham, Roger J.; Volk, Rudiger; **Simons, Michael (1)**
 CS (1) Cardiovasc. Div., RW-453, Beth Israel Deaconess Med. Cent., 330 Brookline Ave., Boston, MA 02215 USA
 SO Circulation Research, (1997) Vol. 81, No. 5, pp. 785-796.
 ISSN: 0009-7330.

DT Article
LA English
AB Heparan sulfates in the extracellular matrix are required for a variety of biological processes, including cellular response to heparin-binding growth factors. However, little is known regarding the regulation of their expression and composition under pathophysiological conditions. In the present study, we have investigated the regulation of expression of two key heparan sulfate chain-carrying core proteins, syndecan-1 and syndecan-4, in a mouse/rat infarct model of tissue injury and repair. Induction of myocardial infarction was associated with a prompt increase in expression of both syndecan genes. Although infiltrating macrophages accounted for a substantial increase in syndecan expression, increased expression was noted in the levels of syndecan-1 mRNA in endothelial cells and syndecan-4 mRNA in cardiac myocytes. This increase in expression was limited to the immediate peri-infarct region and was absent from remote areas of the left or right ventricles. The influx of blood-derived macrophages in the heart correlated with the appearance of **PR-39** peptide, which has previously been shown to increase syndecan expression in vitro. Studies in the op/op mice strain (which demonstrates sharply reduced levels of circulating monocytes) showed that myocardial infarction was associated with markedly reduced levels of macrophage influx and corresponding reduction in the expression of **PR-39** and both syndecan genes. Pretreatment of op/op mice with granulocyte macrophage colony-stimulating factor restored myocardial macrophage content with corresponding restoration of **PR-39**/syndecan expression. In summary, myocardial infarction is associated with a distinct spatial and temporal pattern of syndecan-1 and -4 gene expression, which is induced by an influx of blood-derived macrophages.

CC Biochemical Studies - General *10060
Cardiovascular System - General; Methods *14501
Immunology and Immunochemistry - General; Methods *34502

BC Muridae *86375

IT Major Concepts
Biochemistry and Molecular Biophysics; Cardiovascular System (Transport and Circulation); Immune System (Chemical Coordination and Homeostasis)

IT Chemicals & Biochemicals
HEPARIN SULFATES; PR-39

IT Miscellaneous Descriptors
ANIMAL MODEL; BIOCHEMISTRY AND BIOPHYSICS; BLOOD AND LYMPHATICS; BLOOD-DERIVED; EXPRESSION; GRANULOCYTE MACROPHAGE COLONY-STIMULATION FACTOR; HEART DISEASE; HEPARIN SULFATES; HEPARIN-BINDING GROWTH FACTORS; IMMUNE SYSTEM; MACROPHAGE-DEPENDENT REGULATION; MACROPHAGES; MYOCARDIAL INFARCTION; PR-39 PEPTIDE; SYNDECAN GENE EXPRESSION; SYNDECAN-1; SYNDECAN-4; VASCULAR DISEASE

ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
mouse (Muridae); rat (Muridae)

ORGN Organism Superterms
animals; chordates; mammals; nonhuman mammals; nonhuman vertebrates; rodents; vertebrates

RN 9005-49-6D (HEPARIN SULFATES)
52622-12-5Q (**PR-39**)
139637-11-9Q (**PR-39**)

L49 ANSWER 13 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1997:282147 BIOSIS
DN PREV199799581350
TI Prevention of Chlamydia trachomatis infection by antimicrobial peptides.
AU Burillo, C. A.; Fontenot, J. D.; Phillips, D. M.
CS Population Council, New York, NY USA
SO **Abstracts of the General Meeting of the American Society for Microbiology**, (1997) Vol. 97, No. 0, pp. 100.
Meeting Info.: **97th General Meeting of the American Society for Microbiology** Miami Beach, Florida, USA May 4-8, 1997

ISSN: 1060-2011.

DT **Conference; Abstract; Conference**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Pathology, General and Miscellaneous - Therapy 12512
Medical and Clinical Microbiology - Bacteriology *36002
Chemotherapy - Antibacterial Agents *38504
BC Chlamydiaceae 07121
Muridae *86375
IT Major Concepts
Infection; Pharmacology
IT Chemicals & Biochemicals
PR-39
IT Miscellaneous Descriptors
ANIMAL MODEL; ANTIBACTERIAL-DRUG; HOST; INFECTION; PATHOGEN;
PHARMACOLOGY; **PR-39**; PROPENIN-1
ORGN Super Taxa
Chlamydiaceae: Eubacteria, Bacteria; Muridae: Rodentia, Mammalia,
Vertebrata, Chordata, Animalia
ORGN Organism Name
mouse (Muridae); Chlamydia trachomatis (Chlamydiaceae)
ORGN Organism Superterms
animals; bacteria; chordates; eubacteria; mammals; microorganisms;
nonhuman mammals; nonhuman vertebrates; rodents; vertebrates
RN 52622-12-5Q (**PR-39**)
139637-11-9Q (**PR-39**)

L49 ANSWER 14 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1997:277909 BIOSIS
DN PREV199799577112
TI **PR 39**, a endogenous antimicrobial peptide, accelerated
healing of acetic acid-induced gastric ulcers in rats.
AU Onodera, S.; Okumura, T.; Ono, M.; Takahashi, N.; Kohgo, Y.
CS Third Dep. Internal Med., Asahikawa Med. Coll., Asahikawa 078 Japan
SO Gastroenterology, (1997) Vol. 112, No. 4 SUPPL., pp. A246.
Meeting Info.: **Digestive Disease Week and the 97th Annual Meeting of the American Gastroenterological Association** Washington, D.C., USA
May 11-14, 1997
ISSN: 0016-5085.

DT **Conference; Abstract**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
Biochemical Studies - Proteins, Peptides and Amino Acids 10064
Anatomy and Histology, General and Comparative - Regeneration and Transplantation *11107
Digestive System - Pathology *14006
BC Muridae *86375
IT Major Concepts
Digestive System (Ingestion and Assimilation); Physiology
IT Chemicals & Biochemicals
PR 39; ACETIC ACID
IT Miscellaneous Descriptors
ACCELERATED HEALING; ACETIC ACID-INDUCED GASTRIC ULCERS; ANIMAL MODEL;
BIOCHEMISTRY AND BIOPHYSICS; DIGESTIVE SYSTEM; DIGESTIVE SYSTEM
DISEASE; ENDOGENOUS ANTIMICROBIAL PEPTIDE; **PR 39**
ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
rat (Muridae)
ORGN Organism Superterms
animals; chordates; mammals; nonhuman mammals; nonhuman vertebrates;
rodents; vertebrates
RN 52622-12-5Q (**PR 39**)
139637-11-9Q (**PR 39**)

64-19-7 (ACETIC ACID)

L49 ANSWER 15 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1997:233874 BIOSIS
DN PREV199799533077
TI **PR-39**, a proline-rich antimicrobial peptide, confers
invasive phenotype and actin structure on human hepatoma cells.
AU Ohtake, T.; Fujimoto, Y.; Matsumoto, A.; Ohhira, M.; Ono, M.; Kohgo, Y.
CS 3rd Dep. Intern. Med., Asahikawa Med. Coll., Nishikagura 4-5, Asahikawa
078 Japan
SO **Proceedings of the American Association for Cancer Research Annual
Meeting**, (1997) Vol. 38, No. 0, pp. 548.
Meeting Info.: **Eighty-eighth Annual Meeting of the American
Association for Cancer Research** San Diego, California, USA April
12-16, 1997
ISSN: 0197-016X.
DT **Conference; Abstract**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals 00520**
Cytology and Cytochemistry - Human *02508
Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Biophysics - Molecular Properties and Macromolecules *10506
Digestive System - Pathology *14006
Neoplasms and Neoplastic Agents - Pathology; Clinical Aspects; Systemic
Effects *24004
Neoplasms and Neoplastic Agents - Biochemistry *24006
BC Hominidae *86215
IT Major Concepts
Biochemistry and Molecular Biophysics; Cell Biology; Gastroenterology
(Human Medicine, Medical Sciences); Oncology (Human Medicine, Medical
Sciences)
IT Chemicals & Biochemicals
PR-39; PROLINE; ACTIN
IT Miscellaneous Descriptors
BIOCHEMISTRY AND BIOPHYSICS; CELL BIOLOGY; HLF CELL LINE; HUMAN
HEPATOMA CELLS; INVASIVE PHENOTYPE; **PR-39**;
PROLINE-RICH ANTIMICROBIAL PEPTIDE; SYNDECAN-1; TUMOR BIOLOGY
ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia
ORGN Organism Name
Hominidae (Hominidae)
ORGN Organism Superterms
animals; chordates; humans; mammals; primates; vertebrates
RN 52622-12-5Q (**PR-39**)
139637-11-9Q (**PR-39**)
147-85-3 (PROLINE)
132579-20-5 (ACTIN)

L49 ANSWER 16 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1997:185663 BIOSIS
DN PREV199799484866
TI NADPH oxidase inhibition blocks postischemic leukocyte adhesion.
AU Ross, C. R. (1); Blecha, F.; Korthuis, R. J.
CS (1) Dep. Anatomy Physiol., Kansas State Univ., Manhattan, KS USA
SO FASEB Journal, (1997) Vol. 11, No. 3, pp. A340.
Meeting Info.: **Annual Meeting of the Professional Research Scientists
on Experimental Biology 97** New Orleans, Louisiana, USA April 6-9,
1997
ISSN: 0892-6638.
DT **Conference; Abstract**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals 00520**
Cytology and Cytochemistry - Animal *02506
Biochemistry - Gases *10012

Enzymes - Physiological Studies *10808
 Cardiovascular System - Blood Vessel Pathology *14508
 Blood, Blood-Forming Organs and Body Fluids - Blood Cell Studies *15004
 Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and Reticuloendothelial System *15008

BC Muridae *86375

IT Major Concepts
 Biochemistry and Molecular Biophysics; Blood and Lymphatics (Transport and Circulation); Cardiovascular System (Transport and Circulation); Cell Biology; Enzymology (Biochemistry and Molecular Biophysics)

IT Chemicals & Biochemicals
 NADPH OXIDASE; **PR-39**; OXYGEN

IT Miscellaneous Descriptors
 ADHESION; BLOOD AND LYMPHATICS; CARDIOVASCULAR SYSTEM; CIRCULATORY SYSTEM; DIGESTIVE SYSTEM; EMIGRATION; ENZYME INHIBITOR; EXTRAVASATION; ISCHEMIA-REPERFUSION INJURY; LEUKOCYTE; MESENTERIC VEIN; NADPH OXIDASE; NEUTROPHIL; **PR-39**; PRODUCTION; REACTIVE OXYGEN SPECIES

ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
 rat (Muridae)

ORGN Organism Superterms
 animals; chordates; mammals; nonhuman mammals; nonhuman vertebrates; rodents; vertebrates

RN 9032-22-8Q (NADPH OXIDASE)
 37256-37-4Q (NADPH OXIDASE)
 52622-12-5Q (**PR-39**)
139637-11-9Q (**PR-39**)
 7782-44-7 (OXYGEN)

L49 ANSWER 17 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS

AN 1997:101590 BIOSIS

DN PREV199799400793

TI **PR-39**, a proline-rich peptide antibiotic from pig, and FALL-39, a tentative human counterpart.

AU Agerberth, Birgitta (1); Gunne, Hans; Odeberg, Jacob; Kogner, Per; Boman, Hans G.; Gudmundsson, Gudmundur H.

CS (1) Dep. Microbiol., Stockholm Univ., S-10691 Stockholm Sweden

SO Veterinary Immunology and Immunopathology, (1996) Vol. 54, No. 1-4, pp. 127-131.
 Meeting Info.: **Fourth International Veterinary Immunology Symposium** Davis, California, USA July 1995
 ISSN: 0165-2427.

DT **Conference**

LA English

CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
 Metabolism - Proteins, Peptides and Amino Acids *13012
 Medical and Clinical Microbiology - Bacteriology *36002
 Chemotherapy - Antibacterial Agents *38504
 Pharmacognosy and Pharmaceutical Botany *54000

BC Enterobacteriaceae 06702
 Endospore-forming Gram-Positives 07810
 Suidae 85740
 Hominidae *86215

IT Major Concepts
 Infection; Metabolism; Pharmacognosy (Pharmacology); Pharmacology

IT Chemicals & Biochemicals
PR-39; PROLINE

IT Miscellaneous Descriptors
 ANTIBACTERIAL-DRUG; CATHELIN PROPART; CHROMOSOME MAPPING; FALL-39; GENOMIC CLONING; MISCELLANEOUS METHOD; PHARMACOGNOSY; **PR-39**; PROLINE-RICH PEPTIDE

ORGN Super Taxa
 Endospore-forming Gram-Positives: Eubacteria, Bacteria;

Enterobacteriaceae: Eubacteria, Bacteria; Hominidae: Primates,
Mammalia, Vertebrata, Chordata, Animalia; Suidae: Artiodactyla,
Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name

endospore-forming gram-positive rods and cocci (Endospore-forming
Gram-Positives); human (Hominidae); pig (Suidae); Bacillus megaterium
(Endospore-forming Gram-Positives); Escherichia coli
(Enterobacteriaceae)

ORGN Organism Superterms

animals; artiodactyls; bacteria; chordates; eubacteria; humans;
mammals; microorganisms; nonhuman mammals; nonhuman vertebrates;
primates; vertebrates

RN 52622-12-5Q (PR-39)
139637-11-9Q (PR-39)
147-85-3 (PROLINE)

L49 ANSWER 18 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS

AN 1996:327386 BIOSIS

DN PREV199699049742

TI **PR-39**, a proline-rich antibacterial peptide that
inhibits phagocyte NADPH oxidase activity by binding to Src homology 3
domains of p47-phox.

AU Shi, Jishu; Ross, Christopher R.; Leto, Thomas L.; Blecha, Frank (1)

CS (1) Dep. Anat. Physiol., Coll. Vet. Med., Kans. State Univ., Manhattan, KS
66506-5602 USA

SO **Proceedings of the National Academy of Sciences of the United States
of America**, (1996) Vol. 93, No. 12, pp. 6014-6018.
ISSN: 0027-8424.

DT Article

LA English

AB Reactive oxygen intermediates generated by the phagocyte NADPH oxidase are
critically important components of host defense. However, these highly
toxic oxidants can cause significant tissue injury during inflammation;
thus, it is essential that their generation and inactivation are tightly
regulated. We show here that an endogenous proline-arginine (PR)-rich
antibacterial peptide, **PR-39**, inhibits NADPH oxidase
activity by blocking **assembly** of this enzyme through
interactions with Src homology 3 domains of a cytosolic component. This
neutrophil-derived peptide inhibited oxygen-dependent microbicidal
activity of neutrophils in whole cells and in a cell-free assay of NADPH
oxidase. Both oxidase inhibitory and direct antimicrobial activities were
defined within the amino-terminal 26 residues of **PR-39**
. Oxidase inhibition was attributed to binding of **PR-39**
to the p47-phox cytosolic oxidase component. Its effects involve both a
polybasic amino-terminal segment and a proline-rich core region of
PR-39 that binds to the P47-phox Src homology 3 domains
and, thereby, inhibits interaction with the small subunit of cytochrome
b-558, p22-phox. These findings suggest that **PR-39**,
which has been shown to be involved in tissue repair processes, is a
multifunctional peptide that can regulate NADPH oxidase production of
superoxide anion (O₂⁻), thus limiting excessive tissue damage during
inflammation.

CC Cytology and Cytochemistry - Animal *02506

Biochemical Studies - General *10060

Biochemical Studies - Proteins, Peptides and Amino Acids *10064

Biochemical Studies - Porphyrins and Bile Pigments *10065

Biophysics - Molecular Properties and Macromolecules *10506

Enzymes - Chemical and Physical *10806

Pathology, General and Miscellaneous - Inflammation and Inflammatory
Disease *12508

Metabolism - General Metabolism; Metabolic Pathways *13002

Blood, Blood-Forming Organs and Body Fluids - Blood Cell Studies *15004

Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and
Reticuloendothelial System *15008

Immunology and Immunochemistry - Bacterial, Viral and Fungal *34504

Immunology and Immunochemistry - Immunopathology, Tissue Immunology

*34508

BC Suidae *85740

IT Major Concepts
 Biochemistry and Molecular Biophysics; Blood and Lymphatics (Transport and Circulation); Cell Biology; Enzymology (Biochemistry and Molecular Biophysics); Immune System (Chemical Coordination and Homeostasis); Metabolism; Pathology

IT Chemicals & Biochemicals
PR-39; PROLINE; NADPH OXIDASE; SUPEROXIDE

IT Miscellaneous Descriptors
 CYTOCHROME B-558; HOST DEFENSE; INFLAMMATION; POLY-BASIC AMINO-TERMINAL SEGMENT; PROLINE-RICH CORE REGION; PROTEIN-PROTEIN INTERACTION; P22-PHOX; SUPEROXIDE ANION

ORGN Super Taxa
 Suidae: Artiodactyla, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
 porcine (Suidae)

ORGN Organism Superterms
 animals; artiodactyls; chordates; mammals; nonhuman mammals; nonhuman vertebrates; vertebrates

RN 52622-12-5Q (**PR-39**)
139637-11-9Q (**PR-39**)
 147-85-3 (PROLINE)
 9032-22-8Q (NADPH OXIDASE)
 37256-37-4Q (NADPH OXIDASE)
 11062-77-4 (SUPEROXIDE)

L49 ANSWER 19 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS

AN 1996:305538 BIOSIS

DN PREV199699027894

TI **PR-39**: A proline-rich antimicrobial peptide from neutrophils that inhibits NADPH oxidase by binding to a SH3 domain of P47PHOX.

AU Leto, T. L. (1); Shi, J.; Ross, C. R.; Blecha, F.

CS (1) NIAID, NIH, Bethesda, MD 20892 USA

SO Journal of Investigative Medicine, (1996) Vol. 44, No. 3, pp. 268A.
 Meeting Info.: **Annual Meeting of the Association of American Physicians, the American Society for Clinical Investigation, and the American Federation for Clinical Research: Biomedicine '96, Medical Research from Bench to Bedside** Washington, D.C., USA May 3-6, 1996
 ISSN: 1081-5589.

DT **Conference**

LA English

CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
 Cytology and Cytochemistry - Human *02508
 Biochemical Studies - Proteins, Peptides and Amino Acids 10064
 Biophysics - Membrane Phenomena *10508
 Enzymes - Physiological Studies *10808
 Pathology, General and Miscellaneous - Inflammation and Inflammatory Disease *12508
 Metabolism - Energy and Respiratory Metabolism *13003
 Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and Reticuloendothelial System *15008
 Physiology and Biochemistry of Bacteria *31000
 Immunology and Immunochemistry - Bacterial, Viral and Fungal *34504

BC 00500

Hominidae *86215

IT Major Concepts
 Blood and Lymphatics (Transport and Circulation); Cell Biology; Enzymology (Biochemistry and Molecular Biophysics); Immune System (Chemical Coordination and Homeostasis); Membranes (Cell Biology); Metabolism; Pathology; Physiology

IT Chemicals & Biochemicals
PR-39; PROLINE; NADPH OXIDASE

IT Miscellaneous Descriptors

IMMUNE RESPONSE; INFLAMMATION; **MEETING ABSTRACT**;
OXIDATION

ORGN Super Taxa
Hominidae: Primates, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
human (Hominidae); organisms (Organisms - Unspecified)

ORGN Organism Superterms
animals; chordates; humans; mammals; primates; vertebrates

RN 52622-12-5Q (**PR-39**)
139637-11-9Q (PR-39)
147-85-3 (PROLINE)
9032-22-8Q (NADPH OXIDASE)
37256-37-4Q (NADPH OXIDASE)

L49 ANSWER 20 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1996:52791 BIOSIS
DN PREV199698624926
TI **PR-39**, an antimicrobial peptide, induces syndecans,
binds a receptor and increases cAMP in mesenchymal cells.
AU Gallo, R. L.; Povsic, T. J.; Bemfield, M.
CS Children's Hosp., Harvard Med. Sch., Boston, MA 02115 USA
SO Molecular Biology of the Cell, (1995) Vol. 6, No. SUPPL., pp. 162A.
Meeting Info.: **Thirty-fifth Annual Meeting of the American Society
for Cell Biology** Washington, D.C., USA December 9-13, 1995
ISSN: 1059-1524.

DT **Conference**
LA English
CC **General Biology - Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals 00520**
Cytology and Cytochemistry - Animal *02506
Biochemical Studies - Nucleic Acids, Purines and Pyrimidines *10062
Biochemical Studies - Proteins, Peptides and Amino Acids *10064
Biochemical Studies - Carbohydrates *10068
Biophysics - Membrane Phenomena *10508

BC Muridae *86375
IT Major Concepts
Biochemistry and Molecular Biophysics; Cell Biology; Membranes (Cell
Biology)

IT Chemicals & Biochemicals
PR-39; CYCLIC AMP; HEPARAN SULFATE

IT Miscellaneous Descriptors
CYCLIC AMP; HEPARAN SULFATE; INTEGRAL MEMBRANE PROTEOGLYCAN;
MEETING ABSTRACT; MEETING POSTER;
MOUSE NIH-3T3 CELL; SECOND MESSENGER; SIGNAL TRANSDUCTION; WOUND REPAIR

ORGN Super Taxa
Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
Muridae (Muridae)

ORGN Organism Superterms
animals; chordates; mammals; nonhuman vertebrates; nonhuman mammals;
rodents; vertebrates

RN 52622-12-5Q (**PR-39**)
139637-11-9Q (PR-39)
60-92-4 (CYCLIC AMP)
9050-30-0 (HEPARAN SULFATE)

L49 ANSWER 21 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1995:525790 BIOSIS
DN PREV199598540090
TI Characterization of the antibacterial activity of **PR-39**
and its functional domain, PR-26.
AU Shi, Jishu (1); Blecha, Frank
CS (1) Kans. State Univ., Manhattan, KS 66506 USA
SO **Abstracts of the Interscience Conference on Antimicrobial Agents and
Chemotherapy**, (1995) Vol. 35, No. 0, pp. 133.
Meeting Info.: **35th Interscience Conference on Antimicrobial Agents**

and Chemotherapy San Francisco, California, USA September 17-20, 1995

DT **Conference**

LA English

CC Pathology, General and Miscellaneous - Comparative *12503
 Pathology, General and Miscellaneous - Therapy *12512
 Digestive System - Pathology *14006
 Pharmacology - Clinical Pharmacology *22005
 Pharmacology - Digestive System *22014
 Laboratory Animals - General *28002
 Medical and Clinical Microbiology - Bacteriology *36002
 Veterinary Science - Microbiology *38006
 Chemotherapy - Antibacterial Agents *38504

BC Enterobacteriaceae 06702
 Suidae 85740
 Hominidae 86215
 Muridae *86375

IT Major Concepts
 Animal Care; Gastroenterology (Human Medicine, Medical Sciences);
 Infection; Pathology; Pharmacology; Veterinary Medicine (Medical
 Sciences)

IT Chemicals & Biochemicals
PR-39

IT Miscellaneous Descriptors
 ANTIBACTERIAL-DRUG; HUMAN RELEVANCE; INTESTINE; **MEETING**
ABSTRACT; MEETING POSTER

ORGN Super Taxa
 Enterobacteriaceae: Eubacteria, Bacteria; Hominidae: Primates,
 Mammalia, Vertebrata, Chordata, Animalia; Muridae: Rodentia, Mammalia,
 Vertebrata, Chordata, Animalia; Suidae: Artiodactyla, Mammalia,
 Vertebrata, Chordata, Animalia

ORGN Organism Name
 porcine (Suidae); rat (Muridae); Escherichia coli (Enterobacteriaceae);
 Hominidae (Hominidae); Salmonella choleraesuis (Enterobacteriaceae);
 Salmonella typhimurium (Enterobacteriaceae)

ORGN Organism Superterms
 animals; artiodactyls; bacteria; chordates; eubacteria; humans;
 mammals; microorganisms; nonhuman mammals; nonhuman vertebrates;
 primates; rodents; vertebrates

RN 52622-12-5Q (**PR-39**)
 139637-11-9Q (**PR-39**)

L49 ANSWER 22 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS

AN 1995:408422 BIOSIS

DN PREV199598422722

TI Structure of the gene for porcine peptide antibiotic **PR-39**, a cathelin gene family member: Comparative mapping of the locus for the human peptide antibiotic FALL-39.

AU Gudmundsson, Gudmundur H. (1); Magnusson, Kristinn P.; Chowdhary, Bhanu P.; Johansson, Maria; Andersson, Leif; Boman, Hans G.

CS (1) Dep. Microbiol., Stockholm Univ., S-106 91 Stockholm Sweden

SO **Proceedings of the National Academy of Sciences of the United States of America**, (1995) Vol. 92, No. 15, pp. 7085-7089.
 ISSN: 0027-8424.

DT Article

LA English

AB **PR-39** is a porcine 39-aa peptide antibiotic composed of 49% proline and 24% arginine, with an activity against Gram-negative bacteria comparable to that of tetracycline. In Escherichia coli, it inhibits DNA and protein synthesis. **PR-39** was originally isolated from pig small intestine, but subsequent cDNA cloning showed that the gene is expressed in the bone marrow. The open reading frame of the clone showed that **PR-39** is made as 173-aa precursor whose proregion belongs to the cathelin family. The **PR39** gene, which is rather compact and spans only 1784 bp has now been sequenced. The coding information is split into four exons. The first exon contains the signal sequence of 29 residues and the first 37 residues of

the cathelin propeptide. Exons 2 and 3 contain only cathelin information, while exon 4 codes for the four C-terminal cathelin residues and the mature **PR-39** peptide extended by three residues. The sequenced upstream region (1183 bp) contains four potential recognition sites for NF-IL6 and three for APRF, transcription factors known to regulate genes for both cytokines and acute phase response factors. Genomic hybridizations revealed a fairly high level of restriction fragment length polymorphism and indicated that there are at least two copies of the **PR39** gene in the pig genome. **PR39** was mapped to pig chromosome 13 by linkage and in situ hybridization mapping. The gene for the human peptide antibiotic FALL-39 (also a member of the cathelin family) was mapped to human chromosome 3, which is homologous to pig chromosome 13.

CC Genetics and Cytogenetics - Animal *03506
 Genetics and Cytogenetics - Human *03508
 Biochemical Studies - Nucleic Acids, Purines and Pyrimidines 10062
 Biochemical Studies - Proteins, Peptides and Amino Acids 10064
 Pharmacology - General *22002
 Physiology and Biochemistry of Bacteria 31000
 Chemotherapy - General; Methods; Metabolism *38502

BC Enterobacteriaceae 06702
 Suidae 85740
 Hominidae *86215

IT Major Concepts
 Genetics; Pharmacology

IT Chemicals & Biochemicals
 PROLINE; ARGININE

IT Miscellaneous Descriptors
 ARGININE; DNA; PROLINE

ORGN Super Taxa
 Enterobacteriaceae: Eubacteria, Bacteria; Hominidae: Primates,
 Mammalia, Vertebrata, Chordata, Animalia; Suidae: Artiodactyla,
 Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
 Escherichia coli (Enterobacteriaceae); Hominidae (Hominidae); Suidae
 (Suidae)

ORGN Organism Superterms
 animals; artiodactyls; bacteria; chordates; eubacteria; humans;
 mammals; microorganisms; nonhuman mammals; nonhuman vertebrates;
 primates; vertebrates

RN 147-85-3 (PROLINE)
 74-79-3 (ARGININE)

L49 ANSWER 23 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1995:283071 BIOSIS
 DN PREV199598297371
 TI Identification of a synducin, a novel peptide from wounds that can
 influence cell behavior by induction of syndecan-1 and -4.
 AU Gallo, R. L. (1); Siebert, E. P. (1); Bernfield, M.
 CS (1) Dep. Dermatol., Harvard Med. Sch., Boston, MA USA
 SO Journal of Investigative Dermatology, (1995) Vol. 104, No. 4, pp. 555.
 Meeting Info.: **Annual Meeting of the Society for Investigative
 Dermatology** Chicago, Illinois, USA May 24-28, 1995
 ISSN: 0022-202X.

DT **Conference**
 LA English

CC **General Biology - Symposia, Transactions and Proceedings of
 Conferences, Congresses, Review Annuals 00520**
 Cytology and Cytochemistry - Animal *02506
 Biochemical Studies - Nucleic Acids, Purines and Pyrimidines 10062
 Biochemical Studies - Proteins, Peptides and Amino Acids 10064
 Biochemical Studies - Carbohydrates 10068
 Biophysics - Molecular Properties and Macromolecules *10506
 Anatomy and Histology, General and Comparative - Regeneration and
 Transplantation *11107
 Metabolism - Carbohydrates *13004

Metabolism - Proteins, Peptides and Amino Acids *13012
 Metabolism - Nucleic Acids, Purines and Pyrimidines *13014
 Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and Reticuloendothelial System *15008
 Integumentary System - Physiology and Biochemistry *18504
 Developmental Biology - Embryology - General and Descriptive *25502
 Developmental Biology - Embryology - Morphogenesis, General *25508

BC Muridae *86375

IT Major Concepts
 Biochemistry and Molecular Biophysics; Blood and Lymphatics (Transport and Circulation); Cell Biology; Development; Integumentary System (Chemical Coordination and Homeostasis); Metabolism; Physiology

IT Miscellaneous Descriptors
 ENDOTHELIAL CELL; FIBROBLAST; HEPARAN SULFATE PROTEOGLYCAN;
MEETING ABSTRACT; MESSENGER RNA; MOUSE EMBRYO;
 NEUTROPHIL DEVELOPMENT; **PR-39** ANTIBACTERIAL PEPTIDE

ORGN Super Taxa
 Muridae: Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
 Muridae (Muridae)

ORGN Organism Superterms
 animals; chordates; mammals; nonhuman vertebrates; nonhuman mammals;
 rodents; vertebrates

L49 ANSWER 24 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
 AN 1995:194795 BIOSIS
 DN PREV199598209095
 TI Antibacterial activity of synthetic peptides derived from **PR-39**, a proline-arginine-rich peptide from porcine neutrophils.
 AU Shi, J.; Ross, C. R.; Sylte, M. J.; McVey, D. S.; Blecha, F.
 CS Kansas State Univ., Manhattan, KS 66506 USA
 SO FASEB Journal, (1995) Vol. 9, No. 3, pp. A522.
 Meeting Info.: Experimental Biology 95, Part I Atlanta, Georgia, USA April 9-13, 1995
 ISSN: 0892-6638.

DT **Conference**
 LA English

CC **General Biology - Symposia, Transactions and Proceedings of Conferences, Congresses, Review Annuals 00520**
 Cytology and Cytochemistry - Animal 02506
 Biochemical Studies - Proteins, Peptides and Amino Acids 10064
 Blood, Blood-Forming Organs and Body Fluids - Blood Cell Studies *15004
 Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and Reticuloendothelial System *15008
 Immunology and Immunochemistry - Bacterial, Viral and Fungal *34504
 Immunology and Immunochemistry - Immunopathology, Tissue Immunology *34508
 Medical and Clinical Microbiology - Bacteriology *36002
 Chemotherapy - Antibacterial Agents *38504

BC Enterobacteriaceae 06702
 Suidae *85740

IT Major Concepts
 Blood and Lymphatics (Transport and Circulation); Immune System (Chemical Coordination and Homeostasis); Infection; Pharmacology

IT Chemicals & Biochemicals
PR-39; TETRACYCLINE

IT Miscellaneous Descriptors
 ANTIBACTERIAL-DRUG; ANTIBIOTICS; IMMUNE RESPONSE; **MEETING ABSTRACT**; TETRACYCLINE

ORGN Super Taxa
 Enterobacteriaceae: Eubacteria, Bacteria; Suidae: Artiodactyla, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
 Salmonella choleraesuis (Enterobacteriaceae); Salmonella typhimurium (Enterobacteriaceae); Suidae (Suidae)

ORGN Organism Superterms

animals; artiodactyls; bacteria; chordates; eubacteria; mammals;
microorganisms; nonhuman mammals; nonhuman vertebrates; vertebrates

RN 52622-12-5Q (PR-39)
139637-11-9Q (PR-39)
60-54-8 (TETRACYCLINE)

L49 ANSWER 25 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS
AN 1995:107699 BIOSIS
DN PREV199598121999
TI FALL-39, a putative human peptide antibiotic, is cysteine-free and
expressed in bone marrow and testis.
AU Agerberth, Birgitta (1); Gunne, Hans (1); Odeberg, Jakob; Kogner, Per;
Boman, Hans G. (1); Gudmundsson, Gudmundur H. (1)
CS (1) Dep. Microbiol., Stockholm Univ., S-10691 Stockholm Sweden
SO **Proceedings of the National Academy of Sciences of the United States
of America**, (1995) Vol. 92, No. 1, pp. 195-199.
ISSN: 0027-8424.
DT Article
LA English
AB **PR-39**, a proline/arginine-rich peptide antibiotic, has
been purified from pig intestine and later shown to originate in the bone
marrow. Intending to isolate a clone for a human counterpart to **PR**
-39, we synthesized a PCR probe derived from the **PR-**
39 gene. However, when this probe was used to screen a human bone
marrow cDNA library, eight clones were obtained with information for
another putative human peptide antibiotic, designated FALL-39 after the
first four residues. FALL-39 is a 39-residue peptide lacking cysteine and
tryptophan. All human peptide antibiotics previously isolated (or
predicted) belong to the defensin family and contain three disulfide
bridges. The clone for prepro-FALL-39 encodes a cathelin-like precursor
protein with 170 amino acid residues. We have postulated a dibasic
processing site for the mature FALL-39 and chemically synthesized the
putative peptide. In basal medium E, synthetic FALL-39 was highly active
against *Escherichia coli* and *Bacillus megaterium*. Residues 13-34 in
FALL-39 can be predicted to form a perfect amphipathic helix, and CD
spectra showed that medium E induced 30% helix formation in FALL-39. RNA
blot analyses disclosed that the gene for FALL-39 is expressed mainly in
human bone marrow and testis.

CC Genetics and Cytogenetics - Human *03508
Biochemical Studies - Proteins, Peptides and Amino Acids 10064
Metabolism - Proteins, Peptides and Amino Acids *13012
Blood, Blood-Forming Organs and Body Fluids - Lymphatic Tissue and
Reticuloendothelial System *15008
Reproductive System - Physiology and Biochemistry *16504

BC Enterobacteriaceae 06702
Endospore-forming Gram-Positives 07810
Hominidae *86215

IT Major Concepts
Blood and Lymphatics (Transport and Circulation); Genetics; Metabolism;
Reproductive System (Reproduction)

IT Chemicals & Biochemicals
CYSTEINE

IT Miscellaneous Descriptors
GENE EXPRESSION

ORGN Super Taxa
Endospore-forming Gram-Positives: Eubacteria, Bacteria;
Enterobacteriaceae: Eubacteria, Bacteria; Hominidae: Primates,
Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name
endospore-forming gram-positive rods and cocci (Endospore-forming
Gram-Positives); *Bacillus megaterium* (Endospore-forming
Gram-Positives); *Escherichia coli* (Enterobacteriaceae); Hominidae
(Hominidae)

ORGN Organism Superterms
animals; bacteria; chordates; eubacteria; humans; mammals;
microorganisms; primates; vertebrates

RN 52-90-4 (CYSTEINE)

L49 ANSWER 26 OF 26 BIOSIS COPYRIGHT 2000 BIOSIS

AN 1995:31838 BIOSIS

DN PREV199598046138

TI Syndecans, cell surface heparan sulfate proteoglycans, are induced by a proline-rich antimicrobial peptide from wounds.

AU Gallo, Richard L. (1); Ono, Minoru; Povsic, Thomas; Page, Curtis;

Eriksson, Elof; Klagsburn, Michael; Bernfield, Merton

CS (1) Joint Program Neonatol., Harvard Med. Sch., 300 Longwood Ave., Boston, MA 02115 USA

SO **Proceedings of the National Academy of Sciences of the United States of America**, (1994) Vol. 91, No. 23, pp. 11035-11039.
ISSN: 0027-8424.

DT Article

LA English

AB Cell surface heparan sulfate proteoglycans, such as the syndecans, are required for cellular responses to heparin-binding growth factors and extracellular matrix components. Expression of syndecan-1 and -4 is induced in mesenchymal cells during wound repair in the mouse, consistent with a role for syndecans in regulating cell proliferation and migration in response to these effectors. Here we show that wound fluid contains inductive activity that mimics the in vivo induction in time of appearance, specificity for mesenchymal cells, and selectivity for syndecan-1 and -4. We have purified and synthesized a 4.8-kDa proline-rich protein from wound fluid that reproduces this induction of syndecan-1 and -4 in cultured cells. This peptide, identical to the antibacterial peptide **PR-39**, is released into the wound by the cellular infiltrate and induces syndecan expression at the same peptide concentrations that lyse bacteria. These results indicate that wounds contain a multifunctional protein that induces mammalian cells to express cell surface heparan sulfate proteoglycans as part of the wound repair process and that kills bacteria as part of a nonimmune defense mechanism.

CC Cytology and Cytochemistry - Animal *02506

Biochemical Studies - Proteins, Peptides and Amino Acids *10064

Biophysics - Membrane Phenomena *10508

Metabolism - Carbohydrates 13004

Metabolism - Minerals 13010

Metabolism - Proteins, Peptides and Amino Acids 13012

Endocrine System - General *17002

Immunology and Immunochimistry - Bacterial, Viral and Fungal *34504

Medical and Clinical Microbiology - Bacteriology *36002

BC Bacteria - General Unspecified 05000

Muridae *86375

IT Major Concepts

Biochemistry and Molecular Biophysics; Cell Biology; Endocrine System (Chemical Coordination and Homeostasis); Immune System (Chemical Coordination and Homeostasis); Infection; Membranes (Cell Biology)

IT Chemicals & Biochemicals

HEPARAN SULFATE; PROLINE

IT Miscellaneous Descriptors

ANTI-BACTERIAL DEFENSE; GROWTH FACTOR RESPONSE; PEPTIDE-39

ORGN Super Taxa

Bacteria - General Unspecified: Eubacteria, Bacteria; Muridae:

Rodentia, Mammalia, Vertebrata, Chordata, Animalia

ORGN Organism Name

bacteria (Bacteria - General Unspecified); mouse (Muridae)

ORGN Organism Superterms

animals; bacteria; chordates; eubacteria; mammals; microorganisms; nonhuman mammals; nonhuman vertebrates; rodents; vertebrates

RN 9050-30-0 (HEPARAN SULFATE)

147-85-3 (PROLINE)

=> d his

(FILE 'HOME' ENTERED AT 11:39:29 ON 12 DEC 2000)
SET COST OFF

FILE 'HCAPLUS' ENTERED AT 11:39:39 ON 12 DEC 2000

E SIMONS M/AU
L1 220 S E3-E8,E24-E26
E GOLD Y/AU
L2 68 S PR39 OR PR 39
L3 5 S L1 AND L2
E GAO Y/AU
L4 633 S E3-E19
E GAO YOU/AU
L5 16 S E3,E10
L6 4 S L2 AND L5
L7 5 S L3,L6

FILE 'REGISTRY' ENTERED AT 11:41:30 ON 12 DEC 2000

L8 1 S 139637-11-9

FILE 'HCAPLUS' ENTERED AT 11:41:38 ON 12 DEC 2000

L9 26 S L8
L10 3 S L1,L4 AND L9
L11 5 S L7,L10

FILE 'REGISTRY' ENTERED AT 11:42:06 ON 12 DEC 2000

E RRRPRPPYLPRRPP/SQEP
L12 1 S E3
E RRRPRPPYLPR/SQEP
L13 1 S E3
E RRRPRPPY/SQEP
L14 1 S E3

FILE 'HCAPLUS' ENTERED AT 11:42:56 ON 12 DEC 2000

L15 1 S L12-L14
L16 1 S L1,L4 AND L15
L17 5 S L11,L16
L18 63 S L2,L9 NOT L17
L19 41 S L18 AND ?PEPTIDE?
L20 0 S L18 AND PROTEASOM?

FILE 'REGISTRY' ENTERED AT 11:44:35 ON 12 DEC 2000

L21 1 S 140879-24-9

FILE 'HCAPLUS' ENTERED AT 11:44:41 ON 12 DEC 2000

L22 2170 S L21
L23 0 S L18 AND L22
L24 4 S L17 AND (L22 OR PROTEASOM?)
L25 5 S L17,L24
L26 2 S L18 AND CYTOPLAS?
L27 60 S L18 AND (PD<=19990326 OR PRD<=19990326 OR PRD.B<=19990326 OR
L28 1 S L27 AND ANGIOGEN?
L29 0 S L27 AND HIF
L30 0 S L27 AND HIF1
L31 0 S L27 AND HIF1ALPHA
L32 0 S L27 AND I KAPPA B ALPHA
L33 0 S L27 AND HIF 1 ALPHA
L34 0 S L27 AND HIF I ALPHA
L35 12 S L27 AND (1 OR 63)/SC,SX

FILE 'REGISTRY' ENTERED AT 11:50:16 ON 12 DEC 2000

FILE 'HCAPLUS' ENTERED AT 11:50:53 ON 12 DEC 2000

FILE 'BIOSIS' ENTERED AT 11:51:40 ON 12 DEC 2000
E SIMONS M/AU

L36 409 S E3-E15,E27-E32
E GAO Y/AU
L37 477 S E3-E22
E GAO YOU/AU
L38 8 S E6
L39 59 S L2 OR L8 OR L12-L14
L40 6 S L36-L38 AND L39
L41 4 S L40 AND PY<=1999
L42 20 S L39 AND 00520/CC
L43 27 S L39 AND (CONFERENCE OR CONGRESS OR POSTER OR SYMPOS? OR MEETI
L44 27 S L42,L43
L45 6 S L44 NOT CONFERENCE/DT
L46 4 S L45 NOT (PREV199800492186 OR PREV199800349846)/DN
L47 2 S L45 NOT L46
L48 25 S L44 NOT L47
L49 26 S L41,L48

FILE 'BIOSIS' ENTERED AT 11:55:41 ON 12 DEC 2000